REMARKS

Applicant thanks the Examiner for participating in the telephone interview on February 26, 2009. The following will serve as the interview summary.

The parties also discussed that, prior to any subsequent Office Action, a followup interview might be appropriate following the filing of this response and whatever additional searching the Examiner may perform. In such a followup interview, the parties could further discuss the claims in view of Borzneko, and/or additional references located by the Examiner, if any. The Examiner further indicated she would consider notifying Applicant of any additional art in advance, which Applicant appreciates and agrees would facilitate prosecution. Accordingly, Applicants are filing herewith (via PTO form 413A) a request for a followup interview in approximately one month from the date of filing this response. Of course, another interview would not be desired or necessary if the Examiner concludes that the claims are allowable in view of this response.

Claims 1-184 were originally filed in this application. Claims 1-14, 45-84, 93-99, 100-106 and 137-176 are subject to examination pursuant to a previous restriction/election requirement, and the other claims have been withdrawn. Favorable reconsideration is respectfully requested in view of the claim amendments and following remarks.

I. ELECTION/RESTRICTION REQUIREMENT

In response to the Examiner's restriction/election requirement, Applicant elected with traverse to prosecute the claims forming Group I: claims 1-14, 45-84, 93-99, 100-106, and 137-176. It appears in the Office Action, however, that claims 100-106 were erroneously omitted from examination and are not addressed in the Examiner's rejections. (See Office Action at pages 1 and 3.) Applicant submits, therefore, that if the examined claims are not allowed, the next Office Action should be deemed non-final insofar as all claims subject to examination apparently were not actually examined.

In addition, as discussed during the interview, Applicant understands the Examiner's position that restriction/election requirements, made final as in this case,

typically are not reconsidered. In this case, however, Applicant respectfully requests reconsideration merely as to a small group of claims – those in Group V (claims 85-92 and 177-184). The claims of Group I, which have been examined, are drawn to a method of tracking the individual and collective market activity of plural market makers, and deriving various statistics from such activity. The claims of Group V are similarly drawn. Specifically, the claims of Group V likewise are drawn toward a method (and associated program) of tracking the individual and collective market activity of plural market makers, and deriving statistics from such activity. Because of such similarity, a search and examination of Group V would be comparable to that of Group I. Although reconsideration under these circumstances may be atypical, due to the similar nature of the claims of Groups I and V, Applicant requests withdrawal of the restriction requirement as to Group V so that claims 85-92 and 177-184 may be examined at the current time.

II. STATUTORY SUBJECT MATTER

Method claims 1-14 and 45-84 stand rejected pursuant to 35 U.S.C. § 101 as being directed toward non-statutory subject matter. The Examiner states that pursuant to recent case law, method claims must (1) be tied to another statutory subject matter, or (2) transform underlying subject matter (such as an article or materials) to a different state or thing.

In *In re Bilski*, 545 F.3d 943, 88 U.S.P.Q.2d 1385 (Fed. Cir. 2008), the Federal Circuit recently clarified the standards for determining whether method claims recite statutory subject matter. Under *Bilski*, a process (i.e. method) is eligible for patent protection if: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing. 545 F.3d at 954, 961. Both prongs of *Bilski* are satisfied by the method claims in this case.

Applicant submits that the transformation test of *Bilski* (the second prong) is satisfied. *Bilski* requires applying the transformation test in a manner that accounts for data transformations in the information age: "the main aspect of the transformation test that requires clarification here is what sorts of things constitute 'articles' such that their transformation is sufficient to impart patent-eligibility under § 101." *Bilski*, 545 F3d. at

962. In this vein, the Court noted: "The raw materials of many information-age processes . . . are electronic signals and electronically-manipulated data." *Id*. *Bilski*, therefore, recognizes that the transformation of electronic data constitutes a patentable transformation of an "article" under section 101. *See Bilski*, 545 F3d. at 962-63.

The second prong of Bilski is satisfied here because the incoming data stream (the underlying subject matter) is transformed by the various tracking and analyzing steps. In the claimed invention, market data is received over a computer network. Such data conventionally, for example, may be produced in printed form, displayed on an electronic monitor, stored in memory, or otherwise be resident in some tangible, viewable, and/or accessible format. The received data is transformed from its original content into a new dataset based on the derived statistics recited in the claims. Like the original data, the transformed data may be printed, displayed, stored, etc. in various tangible, viewable, and/or otherwise accessible formats. The transformed data, however, differs from the original data stream, and the transformed data would not be available in any format but for the system and methods of the claimed invention. Because of such transformation, the claims recite statutory subject matter.

In addition, in accordance with the Examiner's comments, the claims have been amended to recite additionally the technological components which are used to perform the recited method steps. During the interview, the Examiner requested that Applicant identify the point of novelty in the method claims and the corresponding structural element associated with the point of novelty. As indicated during the interview, each independent method claim recites an "analyzing" or "tracking" step by which the received data stream is transformed into a new data set of the various derived statistics. The "analyzing/tracking" and resulting derived statistics constitute the point of novelty. As amended, the independent method claims recite "an automated computer processor configured to execute logic" as the structural element associated with the referenced point of novelty.

Both prongs of *Bilski*, therefore, are now satisfied. Accordingly, the rejection of claims 1-14 and 45-84 pursuant to 35 U.S.C. § 101 should be withdrawn.

Program claims 93-106 and 137-176 also stand rejected pursuant to 35 U.S.C. § 101. The Examiner states that these claims recite a program embodied on a computer readable medium, and: "The medium should be tangible and executed by a computer." In accordance with the Examiner's comments, clarifying amendments have been made to independent claims 93, 100, 137, 150, 164, and 169, and therefore the rejection of claims 93-106 and 137-176 pursuant to 35 U.S.C. § 101 should be withdrawn.

III.   OVERVIEW OF THE INVENTIVE CONCEPT

Applicant's invention provides novel systems and methods to track substantially overall market maker activity on an individual market maker by market maker basis to derive various statistics indicative of imbalances in market maker activity. Such imbalances may provide indications of temporary upward or downward price pressure on one or more securities. The statistics derived from the tracked market maker activity, therefore, may aid securities traders in taking advantage of profitable opportunities that might otherwise be missed.

Traders of securities analyze market data for indications that a given security should be bought or sold. As described in the Background section of the Application, individual market makers seeking to sell a security submit offers or "asks" with prices at which they will sell the security, while market makers seeking to buy a security submit "bids" with prices at which they will buy the security. From essentially all of the market maker activity taking place at any given time, there exists a lowest ask price and a highest bid price, referred to in the art as the "inside ask" and "inside bid" respectively. The price range from the inside ask to the inside bid is referred to as the "inside market".

As understood in the art, a "market maker" is an individual or a corporation allowed by the Securities and Exchange Commission (SEC) to register individual securities for trading and makes a market in the issue. As further understood in the art, the term "market maker" includes an "order entry firm", which is an individual or corporation allowed by the SEC to register securities for trading but is not making a market in an issue that they have an order.

The collection and publishing of stock market transactional information is nothing new. It has been done electronically since the invention of the stock ticker tape. Information relied upon by the market makers to set their bids and asks, as termed in the art, includes "level 1 information" and "level 2 information". Level 1 information is the conventional ticker tape information, which includes such items, on a symbol by symbol basis, as the last trade price with its associated trade size, current daily trade volume, daily high and low prices, and various other statistics. These items of information typically are published by the major market exchanges and various news services. As used in the art, level 1 information also includes the inside (lowest) ask and the inside (highest) bid. With the exception of the inside bid and inside ask, all of the other level 1 information flow is transactional in nature and reports trades and other information about the security.

The stock markets are auction markets in which stock security traders, through market makers, compete with each other in the buying and selling of stocks. In this vein, in addition to level 1 information, there exists level 2 information, which includes information as to all the bids and all the asks being made by the various market makers. In particular, level 2 information includes each market maker having at least one open (or active) bid or ask, the time the open bid or ask was made, the volume of the open bid or ask, and the price. (See Application at page 1, line 6 to page 2, line 21.)

The Applicant's methods and systems track individual and collective market maker activity based on certain level 1 and/or level 2 information to identify specific relationships and interactions among the actions of the individual market makers. This is carried out across a plurality of securities. The inventive subject matter of the present application is directed to systems and related methods for tracking the activity of individual market makers with the aim of generating specific statistics that are indicative of temporary, short-term imbalances in market maker activity for one or more securities.

Recognizing and understanding such imbalances in market maker activity for a security may assist a trader in deciding when to buy or sell the security. As used by the Applicant, an imbalance in individual or collective market maker activity represents an upward or downward pressure upon the price of a stock that could lead to a price

change in a particular security. (See Application at page 12, line 25 to page 13, line 10.) Although security prices cannot be predicted with certainty, an upward imbalance tends to predict that a security price will rise, which would indicate a favorable opportunity to buy the security. In contrast, a downward imbalance tends to predict that a security price will fall, which would indicate a favorable opportunity to sell the security.

Applicant sets forth specific ways of tracking market maker activity that are not disclosed or reasonably suggested by the prior art. Once tracked, statistics relating to market maker activity may provide imbalance indicators of trading opportunities. The tracking of market maker activity may be applied in a timely and opportunistic manner across a large number securities and market makers so that a user can be made aware of imbalances in market maker activity for securities that are not being closely observed. With hundreds of level 1 and level 2 data points that are updated each second for an exchange such as the NASDAQ, the claimed systems and methods allow traders to be more fully aware of the behavior of the market makers both individually and collectively. This knowledge may lead to the placement of more opportune buy and sell orders that could not otherwise be accomplished without the claimed systems and methods.

Accordingly, to clarify the significance of the claimed statistics, the independent claims each have been amended to recite that each given derived or selected statistic, based on the tracked market maker activity, is indicative of a temporary imbalance in market maker activity for at least one of the symbols. As shown below, **the reference relied upon the by Examiner does not track individual or collective market maker activity, and, therefore, does not disclose these features of the claimed invention**. Accordingly, the claim rejections should be withdrawn.

IV. CLAIM REJECTIONS BASED ON BORZENKO

Claims 1-14, 45-84, 93-99, and 137-176 stand rejected pursuant to 35 U.S.C. § 102(e) as being anticipated by Borzenko, U.S. Patent No. 6,963,855 (Borzenko). Independent method claims 1, 8, 45, 58, 72, and 77 (and respective corresponding program claims 93, 100, 137, 150, 164, and 169) each recites tracking market maker activity and based on such activity, deriving one or more specific statistics indicative of an imbalance in the activity of the market makers for each of a plurality of securities or

symbols. The dependent claims provide various ways of manipulating the data or conveying the results. Such features include, for example, various ways of filtering and/or updating the incoming data stream of market data, and ways of sorting and/or displaying the results of the statistical calculations.

Since Borzenko does not disclose or suggest tracking individual market maker activity, the system of Borzenko cannot derive the specific statistics recited in the claims, and, therefore, Borzenko does not anticipate the claimed invention.

A. Overview of Borzenko

Borzenko discloses a system for calculating and displaying the rapidity of Nasdaq Level II bid-ask price quote changes in a user selected group of individual securities. The system includes determining a list of a predetermined number of "top moving securities". A top moving security is one that has a high "security momentum" as compared to other securities. Borzenko defines security momentum as the "time difference between a current time and stored tick times and a sum of the time differences so computed" (col. 2, lines 62-65). Further embodiments of momentum in Borzenko are all related to various ways of comparing various tick times for a symbol to other tick times for the same symbol. The list of top moving securities may be ordered from the security with the highest momentum to the lowest. If a given security being analyzed, referred to in Borzenko as the "tick security", has a security momentum higher than the bottom security in the list of top moving securities, the tick security is added to the list and the bottom-listed security is removed. Similarly, the list may be reordered based on changes in the relative security momentum of the listed securities vis a vis each other. (See, e.g., Borzenko at col. 2, lines 37-60.)

"Security momentum" is referred to in Borzenko as a numeric indication of relative security price motion. (Col. 3, lines 34-36; col. 4, lines 14-15.) Specifically, Borzenko refers to "ticks" as a change in the quoted price of a security. Thus, a quote increase is an "up tick", and a quote decrease is a "down tick". The tick quote may be either a bid or an ask. (Col. 7, lines 18-21; col. 7, line 65 to col. 8, line 18; col. 12, lines 42-50.) Each tick also has an associated "tick time" when the tick was received. (Col.

7, lines 22-23.) The security momentum is calculated by calculating a time difference between the current time for each tick, and then summing the calculated time differences. (Col. 10, lines 44-57; Figs. 9A-9B.) In other words, security momentum is a measure of how rapidly the quote price of a security is changing based on the time differences between receiving each tick (up or down) and the current time.

Once a security momentum is calculated for each relevant security, a list of "top moving securities" is generated. The top moving securities are essentially those with the highest upward security momentum. As the security momentum changes for each of the relevant securities, the list may be updated and/or reordered as commensurate with the changes of security momentum of each security relative the security momentum of each other security. (See col. 10, line 58 to col. 11, line 27; Figs. 9C-9E.)

The Examiner appears to take the position that Borzenko's calculation of a security momentum for a plurality of securities, and deriving a list of top moving securities therefrom, is equivalent to the claimed invention. As further described below, however, **Borzenko's calculation of security momentum differs completely from the statistics recited in the claimed invention**.

Borzenko is focused on his particular definition of momentum, and his particular ways of displaying momentum graphically and arranging the order of securities based upon their momentum. An examination Borzenko, including the text, the formulas and figures, shows that Borzenko does not consider the individual market maker associated with a tick.

Changes in "ticks" as disclosed by Borzenko have nothing to do with determining whether a price quote associated with an individual market maker (MMID) is at the inside quote price. **Borzenko doesn't keep track of MMID's let alone try to associate an MMID with a tick price.** A tick, as defined by Borzenko, can occur at any price.

Also, Borzenko does not distinguish between the inside quote price or any other quote price. He treats all quote prices the same. All that Borzenko does is keep track of the quote price changes in the Nasdaq Level II data stream for a security without regard to the quote price location among all of the bids and asks, and without

regard to the MMID associated with a quote price change. For example, bid prices in a stock may range from a low of 98.00 to a high of 100.00. By definition, the inside bid price is the highest bid price in the range of all bid prices. In this example, 100.00 would be the inside bid price. Borzenko, however, is keeping track of randomly ordered bid quote price changes taking place between 98.00 and 100.00, without regard to the MMID, and measuring the time between each tick. In this example, bid quote price changes with an associated MMID could be 99.32 (BEST), 98.76 (GSCO), 99.99 (PIPR), 99.01(GSCO), etc. Borzenko's invention then takes all of these ticks in an attempt to measure security momentum, and represents these ticks with colors in a thermograph. The same analogy, reversed in price order, would be applicable for ask prices. Therefore, security momentum has nothing to do with a security's location relative to the inside bid price or inside ask price.

Also, as one skilled in the art knows, a relatively small group of stock securities represent a huge volume of the overall trading volume on the Nasdaq stock exchange, as compared to less traded securities. For example, a stock such as Microsoft could have over 100,000 separate trades during a day. One would expect that with so many trades, there would be a huge number of ticks occurring every trading day with very little time between ticks. One would logically presume that Borzenko's thermograph would consistently show high values of MSFT each and every trading day. The same analogy could be given for many other securities that trade in huge volumes every day.

The data used by Borzenko to determine a tick is a small subset of the information supplied in a Nasdaq quote. It is limited to symbol, tick direction and side. Furthermore, it only extracts the "tick" if there is a change in price. In contrast, the Applicant's invention uses all of the information in a Nasdaq Level II Quote.

The Applicant's invention is focused on statistics derived from the individual and collective activity of market makers. **Borzenko does not teach using information relating to market makers. The Applicant, therefore, could not learn anything from the teachings of Borzenko about market makers, and any statistics derived relating to market makers.**

B.   Passages of Borzenko Cited By the Examiner

The Examiner's prior art rejections essentially consist of a quotation of each claim followed by an identical string citation that lists passages from Borzenko. Little additional explanation is provided, so it is not fully clear precisely which aspects of Borzenko purportedly disclose the specific claim features. That said, throughout the Office Action, the Examiner lists the following passages of Borzenko as allegedly anticipating the claimed invention: col. 2, line 25 to col. 4, line 18; col. 6, lines 6-35; col. 7, line 35 to col. 8 line 55; and col. 11, lines 30-45. For the following reasons, these passages of Borzenko do not demonstrate that Borzenko anticipates the claimed invention.

Col. 2, line 25 to col. 4, line 18: This passage is the entire Summary of Invention of Borzenko. From this general citation to the entire Summary, it is not clear which specific features of Borzenko the Examiner considers to correspond to each specific feature of the claimed invention. As described above, the system of Borzenko calculates a "security momentum" for a plurality of securities, from which a list of "top moving securities" is generated. The security momentum of Borzenko differs completely from the statistics derived in the claimed invention. A more specific analysis of the differences between Borzenko's security momentum and each of the claimed statistics is presented below.

Col. 6, lines 6-35: This passage of Borzneko is simply a definition of a "market maker" and an exemplary list of market makers. Applicant recognizes that the concept of a market maker, in and of itself, is known. The passage, however, does not disclose any subject matter relating to the tracking of a specific category of market maker activity. Accordingly, beyond the reference to market makers, this passage does not disclose or suggest features of the claimed invention.

Col. 7, line 35 to col. 8, line 55: A portion of this passage of Borzenko (col. 7, lines 35-60) is simply a description of Level II information, which, as recognized by Applicant, is part of the prior art. The remainder of this passage (col. 35, line 63 to col. 8, line 55) defines Borzenko's use of the terms "tick" and "tick times" and their associated display. At col. 8, lines 6-9, Borzenko states "the data elements used to derive ticks are symbols, tick direction, and side". Each tick is associated with a

symbol. Borzenko further states that symbols are a "security for which the tick represents a price change". One skilled in the art would also recognize that Borzenko is only using a small subset of the information fields provided in a Nasdaq Level II Quote.

Referring to Figure 2 of Borzenko (Sheet 2 of 23) and referring directly above to Borzenko's definition of a "tick," one can clearly see that Borzenko does not use "Quantity" (number of share in a bid or ask), or "MMID" (Market Maker ID) in any of his calculations. **By contrast, the Applicant uses Level 1 data plus Quantity and MMID to calculate the claimed statistics.**

As stated above, "ticks" are changes in the quoted price of a security, with a price increase being an "up tick" and a price decrease being a "down tick". The "tick time" is when the tick was received. Beyond the descriptions of Level II information and Borzenko's definition of ticks, this passage does not relate to the derivation or calculation of any statistics based on such Nasdaq level II quote information. It follows, therefore, that the passage does not disclose or suggest the specific statistics recited in the claimed invention.

<u>Col. 11, lines 30-45:</u> This passage of Borzenko describes portions of a computer system for storing and displaying data associated with other aspects of the system, such as, for example, storing and displaying lists of securities. This passage does not relate to the derivation or calculation of any statistics based on such data. It follows, therefore, that this passage does not disclose or suggest the specific statistics recited in the claimed invention.

Each of the Applicant's independent method claims 1, 8, 45, 58, 72, and 77 (and respective corresponding independent program claims 93, 100, 137, 150, 164, and 169) recites tracking market maker activity to derive one or more specific statistics indicative of an imbalance in market maker activity for each of a plurality of securities or symbols. None of the passages cited by the Examiner discloses deriving any statistics associated with MMID (Market Maker ID) or Quantity. In addition, in the system of Borzenko, the only statistic derived from the Nasdaq Level II quotes is the described "security momentum". As further explained below, the security momentum of Borzenko differs from the specific statistics recited in the Applicant's various claims. For at least these

reasons, Borzenko does not anticipate the claimed invention in either the passages cited by the Examiner, or in any other portion.

C. Analysis of Specific Claim Groups

In the following sections, the claims are analyzed in pairs of an independent method claim and corresponding independent program claim.

As stated above, "security momentum" is referred to in Borzenko as a numeric indication of relative security bid-ask quote price motion. (Col. 3, lines 34-36; col. 4, lines 14-15.) The security momentum is calculated by calculating a time difference between the current time for each tick (which may be a change in a bid price or ask price), and then summing the calculated time differences. (Col. 10, lines 44-57; Figs. 9A-9B.) Thus, security momentum is a measure of how rapidly the quote price of a security is changing based on the time differences between receiving each tick and the current time. A list of top moving securities is then generated, representing a list of securities having the highest security momentum relative to other securities being analyzed.

1. Independent Claims 1 and 93

Independent claims 1 and 93 each recite deriving a statistic comprising a total number of market makers at the inside market, and a difference between a number of market makers at an inside bid price and a number of market makers at an inside ask price. The spread between the number of market makers at the inside bid price versus the inside ask price is an imbalance indicative of a temporary price pressure for a security. For example, if market maker activity is weighted heavily toward the bid side (i.e., a relatively substantial number of market makers are looking to buy), there is upward pressure on the security price due to the high demand, The reverse is true if market maker activity is heavily weighted toward the ask (sell) side.

The security momentum of Borzenko is based only on actual bid or ask price changes (ticks), and does not associate an MMID with a tick. Also, Borzenko only considers a tick to be new if there is a price change in a bid or an ask price. **Borzenko does not consider a change in quantity (number of shares) to be a new tick.**

Therefore, since Borzenko does not track market makers individually or collectively, security momentum does not take into account the number of market makers at a given inside price, whether on the bid side or ask side. **The claimed invention, therefore, has an advantage of recognizing price pressure even when there is no movement or change in the inside bid and/or ask prices.** Thus, a trader may act before the security price changes. In the momentum system of Borzenko, a trader is always responding to previously occurring movements of the quote price, so there is a risk that trading opportunities may be missed should a trader react too late.

Furthermore, in the system of Borzenko, a single market maker may be responsible for a given tick or series of ticks, which may not be representative of broader market maker sentiment. By accounting for the activity of numerous market makers simultaneously, the claimed invention has an advantage of accounting for market maker sentiment as a whole, which is more apt to accurately represent price pressure than Borzenko's security momentum as measured from discreet ticks.

2. *Independent Claims 8 and 100*

Independent claims 8 and 100 recite deriving a statistic comprising a total volume of shares at the inside market, and at least one of a difference between a number of shares at an inside bid price and a number of shares at an inside ask price, or a percent of inside market shares at the inside bid price as compared to a percent of inside market shares at the inside ask price. Similar to the statistics recited in claims 1 and 93, the statistics recited in claims 8 and 100 provide a measure of whether or not market maker activity is imbalanced or weighted toward either the bid (buy) side or ask (sell) side. Again, such an imbalance is indicative of a commensurate temporary price pressure. In the statistics of claims 8 and 100, the market maker activity with respect to the bid side versus the ask side is measured based on the number of shares or percent of shares at the inside bid price versus the inside ask price.

Borzenko does not use the Quantity (number of shares) data field in his derivation of a tick. Since Bozenko does not use the Quantity data field, he does not or cannot disclose or suggest such statistics for similar reasons as to the statistics recited in claims 1 and 93. The security momentum of Borzenko is based only on actual

quote changes (ticks) as indicated by individual tick measurements. Security momentum, therefore, does not take into account the number of shares, or a percent of shares, at a given inside price, whether on the bid side or ask side. The claimed invention, therefore, once more has an advantage of recognizing price pressure even when there is no movement or change in the inside bid and/or ask prices. Thus, based upon a change in quantity a trader may act before the security price changes. Furthermore, by accounting for the activity of numerous market makers simultaneously, the claimed invention has an advantage of accounting for market maker sentiment as a whole, which is more apt to accurately represent price pressure than Borzenko's security momentum as measured from discreet ticks.

3. Independent Claims 45 and 137

Independent claims 45 and 137 recite, on a symbol by symbol basis, deriving a statistic that compares an aspect of market maker inside market activity at a first time period versus a second time period. The aspect of market maker activity to be compared at the two time periods may be selected from at least one of a number of bids, a number of asks, a bid volume of shares, an ask volume of shares, a volume of shares per bid, or a volume of shares per ask. Similar to the statistics recited in the previous claims, the statistics recited in claims 45 and 137 provide a measure of whether or not market maker activity is imbalanced or weighted toward either the bid (buy) side or ask (sell) side. For example, changes reflecting increased bid activity from the first time period to the second time period may be indicative of an upward price pressure, and changes reflecting increased ask activity from the first time period to the second time period may be indicative of a downward upward price pressure.

Borzenko does not compare time periods of activity to each other. Therefore, Borzenko does not disclose or suggest such statistics for similar reasons as to the statistics recited in the previous claims. The security momentum of Borzenko is based only on actual quote changes (ticks) as indicated by individual tick measurements. Security momentum, therefore, does not take into account the number of bids or asks, the share volume of bids or asks, or the volume of shares per bid or per ask at a first time period as compared to a second time period.

The embodiment recited in these claims uses an aspect of "time" and therefore at first glance may appear to have a similarity to the security momentum of Borzenko in that changes in bid or ask activity may be measured over time. The claimed statistics, however, are far more complete than the security momentum of Borzenko. The security momentum of Borzenko is of limited value because it is determined based on individual tick measurements. In contrast, in the claimed invention the presence of market maker imbalances are based on more comprehensive tracking of the totality of market maker activity at the bid/ask prices for the first and second time periods.

4. *Independent Claims 58 and 150*

Independent claims 58 and 150 recite, for a selected market maker and on a symbol by symbol basis, deriving a statistic that compares an aspect of market maker inside market activity at a first time period versus a second time period. The aspect of market maker activity to be compared at the two time periods may be selected from at least one of a number of bids, a number of asks, a bid volume of shares, an ask volume of shares, a volume of shares per bid, or a volume of shares per ask. Similar to the statistics recited in the previous claims, the statistics recited in claims 58 and 150 provide a measure of whether or not market maker activity is imbalanced or weighted toward either the bid (buy) side or ask (sell) side. The statistics of claims 58 and 150 are similar to those of claims 45 and 137 in comparing an aspect of market maker inside market activity at a first time period versus a second time period. Claims 58 and 150 additionally recite that the statistics are calculated for a selected market maker, and therefore provide an analysis focused on that specific market maker.

Borzenko does not compare time periods to each other. Therefore, Borzenko does not disclose or suggest such statistics for similar reasons as to the statistics recited in the previous claims. The security momentum of Borzenko is based only on actual quote changes (ticks) as indicated by individual tick measurements. Security momentum, therefore, does not take into account the number of bids or asks, the share volume of bids or asks, or the volume of shares per bid or per ask at a first time period as compared to a second time period.

The embodiment recited in these claims uses an aspect of "time" and therefore at first glance may appear to have a similarity to the security momentum of Borzenko in that changes in bid or ask activity may be measured over time. **The claimed statistics, however, are far more complete and complex than the security momentum of Borzenko.** The security momentum of Borzenko is of limited value because it is determined based on individual tick measurements. In contrast, in the claimed invention the presence of market maker imbalances are based on more comprehensive tracking of the totality of market maker activity at the bid/ask prices for the first and second time periods.

Claims 58 and 150 additionally recite that the recited statistics are determined "for a selected market maker". In this manner, a trader may track the trends or sentiment associated with a particular market maker. If that market maker is particularly prominent or important under the circumstances, focusing on that specific market maker may provide an enhanced indication of price pressure on a security. In the system of Borzenko, security momentum is determined based on the ticks irrespective of the identity of the market maker submitting a given bid or ask. Also, as shown many times above, Borzenko does not track the activity of market makers. As such, the system of Borzenko does not permit a trader to focus on the activity of a particular, selected market maker as in the claimed invention.

5.   *Independent Claims 72 and 164*

Independent claims 72 and 164 recite, for each symbol and market maker pair from a set of symbols and a set of market makers, deriving a statistic comprising counting at least one of a number of times that a bid having an inside bid price is placed, or a number of times that an ask having an inside ask price is placed. Similar to the statistics recited in the previous claims, the statistics recited in claims 72 and 164 provide a measure of whether or not market maker activity is imbalanced or weighted toward either the bid (buy) side or ask (sell) side. Again, such an imbalance is indicative of a commensurate temporary price pressure.

In the statistics of claims 72 and 164, the market maker activity with respect to the bid side versus the ask side is measured based on the number of times, for a given

symbol, that a given market maker has a bid at the inside bid or an ask at the inside ask. A market maker's persistence in placing a bid at the inside bid may be indicative of a buy sentiment for the market maker, and a market maker's persistence in placing an ask at the inside ask may be indicative of a sell sentiment for the market maker. If a trader regards the market maker as a particularly significant player with respect to the relevant symbol, the market maker's activity at the inside bid or inside ask may be indicative of a commensurate price pressure on the relevant symbol.

Borzenko does not track the activity of market makers. Borzenko does not disclose or suggest such statistics for similar reasons as to the statistics recited in the previous claims. The security momentum of Borzenko is based only on actual quote changes (ticks) as indicated by individual tick measurements. The security momentum is determined based on the ticks irrespective of the identity of the market maker submitting a given bid or ask. As such, since he does not track the activity of market makers, the system of Borzenko does not permit a trader to focus on the activity of a particular, selected market maker as in the claimed invention. It follows, therefore, that Borzenko does not disclose or suggest determining the number of times a particular market maker is at the inside bid or inside ask for a given symbol, as recited in claims 72 and 164.

6. Independent Claims 77 and 169

Independent claims 77 and 169 recite, for each symbol and market maker pair from a set of symbols and a set of market makers, deriving a statistic comprising counting at least one of: a number of times the market maker is a first market maker to post an inside bid that is higher than an immediately preceding inside bid for the symbol, or a number of times the market maker is a first market maker to post an inside ask that is lower than an immediately preceding inside ask for the symbol. Similar to the statistics recited in the previous claims, the statistics recited in claims 77 and 169 provide a measure of whether or not market maker activity is imbalanced or weighted toward either the bid (buy) side or ask (sell) side. Again, such an imbalance is indicative of a commensurate temporary price pressure.

In the statistics of claims 77 and 169, the market maker activity with respect to the bid side versus the ask side is measured based on the number of times, for a given symbol, a given market maker is the first to post an inside bid higher than an immediately preceding inside bid, or is the first to post an inside ask lower than an immediately preceding inside ask. Similar to the statistics of claims 72 and 164, the statistics demonstrate a market maker's persistence in placing a bid at the inside bid or persistence in placing an ask at the inside ask. In other words, the fact that a market maker is commonly the first to bid above the inside bid may be indicative of a buy sentiment for the market maker, and the fact that a market maker is commonly the first to ask below the inside ask may be indicative of a sell sentiment for the market maker. Once more, if a trader regards the market maker as a particularly significant player with respect to the relevant symbol, the market maker's activity relative to immediately preceding inside bids or inside asks may be indicative of a commensurate price pressure on the relevant symbol.

Borzenko does not track the activity of market makers. Borzenko does not disclose or suggest such statistics for similar reasons as to the statistics recited in the previous claims. The security momentum of Borzenko is based only on actual quote changes (ticks) as indicated by individual tick measurements. The security momentum is determined based on the ticks irrespective of the identity of the market maker submitting a given bid or ask. As such, since he does not track the activity of market makers, the system of Borzenko does not permit a trader to focus on the activity of a particular, selected market maker as in the claimed invention. It follows, therefore, that Borzenko does not disclose or suggest determining the number of times a given market maker is the first to post an inside bid higher than an immediately preceding inside bid, or is the first to post an inside ask lower than an immediately preceding inside ask, as recited in claims 77 and 169.

For at least the foregoing reasons, Borzenko does not disclose or suggest the statistics recited in independent method claims 1, 8, 45, 58, 72, and 77, and respective corresponding independent program claims 93, 100, 137, 150, 164, and 169. Accordingly, Borzenko does not anticipate the claimed invention. The dependent claims

depending from such independent claims are patentable for at least the same reasons. Accordingly, the rejections should be withdrawn.

V. CONCLUSION

For at least the foregoing reasons, claims 1-14, 45-84, 93-99, 100-106 and 137-176 are believed to be allowable, and the application is believed to be in condition for allowance. A prompt action to such end is respectfully requested.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 18-0988, our Order No. CUTSP0104US.

Respectfully submitted,

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